Ukraine's wood industry: navigating current challenges and forging a path to growth in a recovery scenario

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Client

German Federal Office of Food and Agriculture (BLE)

Authors

Veronica Alonso, unique land use GmbH, Freiburg, Germany
Bernd Wippel, unique land use GmbH, Freiburg, Germany
Ihor Soloviy, Ukrainian National Forestry University, Lviv, Ukraine
Taras Chelepis, Ukrainian National Forestry University, Lviv, Ukraine
Vasyl Lavnyy, Ukrainian National Forestry University, Lviv, Ukraine
Rattiya S. Lippe, Thünen-Institute of Forestry, Hamburg, Germany
Jörg Schweinle, Thünen-Institute of Forestry, Hamburg, Germany

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1. Executive summary

The WoodforWork project aimed to analyse employment dynamics within forest and wood value chains. Focusing on Ukraine, the project assessed the strategic role and challenges of the wood industry amid ongoing war conditions. The study delved into employment needs, skill requirements, and economic factors, aiming to offer insights for future policy recommendations and sectoral recovery.

The Ukrainian wood industry faces significant challenges due to the war, impacting production, workforce, raw material procurement, and market dynamics. The report suggests targeted interventions for sustainable recovery, categorizing recommendations for the government, companies, and associations. For the government, key proposals include enhancing transportation infrastructure, establishing fair wood procurement conditions, reforming the tax system to encourage innovation, offering compensation for war-affected companies, addressing skill gaps through education, and developing a forest cluster policy. For companies, recommendations include fostering collaborations for innovation, adapting supply chain management, prioritizing investments in product and marketing innovations, and exploring new markets. Associations are encouraged to collaborate with the government in formulating support programs, assistance with subsidy programs applications and tax incentives, and actively engage in employee training.

In conclusion, the WoodforWork project underlines the resilience and adaptive capacity of Ukraine's wood industry. By implementing tailored strategies for different stakeholders, the industry can overcome current challenges and emerge as a key player in the economic recovery scenario.

2. Wood for Work project – Ukrainian Case study

The WoodforWork project (2020-2023) aims to generate and analyse accurate data pertaining to employment dynamics within forest and wood value chains across diverse economies. The primary objectives of the project included an in-depth study of crucial facets such as informal employment, gender disparities, promotion of decent work, and an examination of the repercussions of institutional, legal, and economic shifts on employment within the context of forest-related activities. It is funded by the German Federal Ministry of Food and Agriculture (BMEL) through the German Federal Office of Food and Agriculture (BLE) due to a decision of the Deutscher Bundestag and coordinated by Unique land use GmbH and Thünen Institute, in cooperation with the Ukrainian National Forestry University in Lviv.

As part of the project, in-depth country studies and case studies were conducted in four different countries: Vietnam, Ecuador, Ukraine and Kenya. These case studies were designed to examine the forest and wood sector, identifying its characteristics and challenges. The cases aim to provide recommendations, with the goal of addressing challenges and bringing opportunities to the sector.

For the Ukrainian case study, we sought to the strategic role of the wood industry in Ukraine and its challenges in the ongoing war. Our study focuses on understanding employment needs and opportunities, with an analysis of economic aspects, and outlook in a recovery scenario. We examine how companies addressed staff shortages, the skill profiles required, and the overall industry economic situation. Our aim is to provide insights beyond existing literature, contributing to future policy recommendations for sectoral recovery.

3. Introduction: the relevance of the case study

The wood industries hold significant importance in the Ukrainian economy. In 2019, its contribution to the country's GDP accounted for 1.27% (Guzhva I., Ivanov Y., 2018) and represented approximately 7% of the total volume of industrial products sold. Furthermore, it constituted about 14% of all industrial enterprises in 2019 (Koval. L, Liahovska O., 2019). As of January 2022, this sector employed an average of approximately 76,000 regular workers, including pulp and paper, comprising 4% of the industry workforce (State Statistics Service of Ukraine, 2022). This export-oriented and highly dynamic sector (Halasiuk. V. V., 2017) encountered substantial challenges, both pre-existing and aggravated since the onset of the war in 2022.

In the years preceding the 2022 war, Ukraine's wood sector faced significant challenges and underwent notable reforms. In 2015, a substantial and increasing trend in the export of unprocessed timber prompted a 10-year ban on such exports (Halasiuk. V. V., 2017) (Muzyka, D. I., & Figurka, M. V., 2017). The implementation of the ban was driven by critical factors, with the primary objective of supporting domestic wood industries. Furthermore, it aimed to address environmental concerns, specifically targeting the reduction of deforestation. The strategy included lowering the costs associated with domestic wood processing and enhancing tax revenues. Another significant goal was to boost the Gross Domestic Product (GDP) by focusing on exports of high-value products. Additionally, the ban was seen to create quality employment opportunities within the sector. Initial assessments of the ban's impact have been positive, demonstrating its effectiveness in mitigating forest depletion. Moreover, it has brought tangible economic benefits to the wood industry, one of which is the increased importation of advanced processing machinery. For example, Halasiuk (2017), indicated that within one year of the ban's introduction, machinery investments increased by 2.5 times in USD within the sector. By 2018, three years post-implementation, Ukraine had significantly reduced unprocessed wood exports, while exports of processed wood products had risen from 48% in 2013 to 73% in 2018 (Sozanskyy, L., & Koval, L., 2019).

Figure 1: Production machinery at an interviewed company, Ukraine, July 2023

Additionally, prior to 2019, the domestic trade of raw materials posed challenges due to the lack of transparency and high prices. To address this, the government introduced digital auction systems aimed at enhancing technology integration and transparency in domestic sales. This reform aligned with European best practices and standards, promoting traceability in sales processes to meet EU standards. However, it remains a topic of debate among industry stakeholders due to its partial functionality**.**

Presently, the sector grapples with serious challenges stemming from the consequences of the ongoing war. The Ukrainian Ministry of Economy estimated a 30.4% decrease in GDP for 2022 due to the war (Reuters, 2023). The war has had significant effects on Ukraine's forest sector, particularly in terms of wood supply (Hubarieva, I. O., Zinchenko, V. A., Manoilenko, O. V., & Blahun, S. I., 2022). Approximately 2.9 million hectares of forests were damaged, with about 1 million hectares located within active hostility zones. The presence of landmines and a significant increase in forest fires have compounded the situation, with climate change contributing to heightened fire risks.

Furthermore, many companies had to halt production and engage in volunteer activities, supporting the government. For example, providing sewing vests, pillows, and mattresses for the military, instead of their usual manufacturing, such as furniture (Halyniak L.; Pavlykivska O., 2022). Additionally, numerous facilities within the wood industry were either destroyed or damaged, exacerbating sectoral challenges. Local wood supply has also dwindled due to bans on Russian and Belarusian timber imports. Consequently, this has resulted in reduced supplies to foreign markets and increased prices (Prins, 2022), negatively impacting wood industry production (Prodanova et al., 2022). Additionally, the demand for roundwood as a fuel has competed directly with the demand from the wood sector, further straining companies' economic performance. Transportation and logistical challenges (Prins, 2022) (Serhii et al., 2022) have complicated both the procurement of raw materials and the distribution of wood companies' products. Damaged infrastructure, closed roads (Hubarieva, I. O., Zinchenko, V. A., Manoilenko, O. V., & Blahun, S. I., 2022), and a substantial rise in transportation costs, partly due to increased fuel prices, have all added to the challenges faced by the sector. Since the beginning of the war, cross-border logistics has emerged as real challenge for Ukrainian business. This situation was exacerbated when Polish protesters blocked the borders for two months, significantly intensifying the difficulties. The blockade has resulted in a steep increase in logistics costs for Ukrainian manufacturers, soaring by 150-200% when using Slovakian routes, where transportation costs can constitute up to 60% of the product's value (Dyug, 2023). Currently, logistics expenses account for as much as 30% of the cost for wood and furniture products. This escalation in costs has led to delayed deliveries of wood-based products and has severely impacted the reputation of Ukrainian wood companies, undermining their reliability as suppliers to the European Union market.

Another major issue pertains to the fluctuations and uncertainties in Ukraine's labor market (Szajna and Kostrzewski, 2022; Horne, 2023). On one hand, the war triggered a labor shortage for various reasons, leaving numerous positions unfilled due to the scarcity of workers in the economy, especially specialized personnel in the sector (Prins, 2022; Szajna and Kostrzewski, 2022) (Hubarieva, I. O., Zinchenko, V. A., Manoilenko, O. V., & Blahun, S. I., 2022). On the other hand, many companies had to relocate from eastern to western Ukraine due to the war, impacting the availability of regional labor forces (Anastasia et al., 2022). Some employees followed these companies, but many did not. The migration of workers across regions and the hiring of workers in new locations have resulted in intricate changes within the industry that are still not fully understood.

Nevertheless, several institutions across the country are actively considering measures to mitigate the challenges facing the wood industries and implement long-term strategies for its growth. In a document published by Hubarieva, I et al. (2022), recommendations were made to ensure the competitiveness of the wood industry in the aftermath of the war. These recommendations included simplifying business requirements for starting and operating a business, streamlining tax rules to reduce tax pressure, expanding lending options, and providing compensation for businesses. Additionally, they proposed supporting the relocation of businesses from hostile zones to western Ukraine.

Figure 2: Wood products yard at an interviewed company, Ukraine, July 2023

Additional recommendations were outlined in the Ukrainian Recovery Plan (2022), by the National Council for the Recovery of Ukraine from War. This plan places a priority on structural transformation within the economy, with a particular emphasis on expediting the growth of the wood industry, including the wood sector. Key reforms for this sector involve maintaining the export ban on unprocessed timber in the form of logs and split wood, thus emphasizing the pivotal role of the wood sector. The plan also highlights the finalization and adoption of the Law of Ukraine on the Timber Market to enhance transparency and organization in timber sales, enabling better support for wood industries, and ensuring compliance with the European Union

Timber Regulation (EUTR). Additionally, the plan emphasizes the development of Ukrainian production for critical components needed by the wood industry, such as chemicals, materials, and adhesives. Labor reform is another significant aspect, which involves the implementation of fast reskilling programs for employees, aimed at mitigating the effects of labor shortages caused by the war, among other measures.

Scope of the case study

Given the numerous challenges confronting the sector after the war started and recognizing its strategic relevance in the Ukrainian economy, our study aims to delve deeper into identifying the employment needs and opportunities within the wood industry. This entails investigating how companies coped with staff shortages, the types of skill profiles required, and the overall attractiveness of the sector as a workplace, among other topics. Our goal is to provide more specific insights than general inquiries addressed in existing literature. Ultimately, our objective is to contribute to future policy recommendations that can bolster the sector in a recovery scenario. To achieve a comprehensive understanding, an analysis of economic aspects is conducted.

To achieve this objective, a comprehensive case study on the industry was conducted, in both public (state) forest companies and private companies, which includes online surveys and qualitative interviews to gather firsthand insights from key stakeholders in the wood industry.

The case study report is structured as follows: Section 2 outlines the methodology employed in conducting the case study. Section 3 presents the primary findings, which encompass the results obtained from both online surveys and qualitative interviews. Section 4 delves into a detailed discussion of the main findings from the study and provides recommendations to enhance the sector. Additionally, this section addresses the limitations of our analysis.

4. Case study development and methodology

The case study of Ukraine's wood industry was designed in a three-stage methodology encompassing a literature review, an online survey, and qualitative interviews.

4.1. Literature review

The initial phase entailed an exhaustive review of secondary literature, unpublished, which served as a comprehensive analysis on the Ukrainian forest sector. Its objective was not publication but rather to lay the groundwork for identifying cases worthy of in-depth study. The main public sources used for the country report were UNECE, Food and Agriculture Organization, Ministry of Finance of Ukraine, State Statistics Service of Ukraine, National Bank of Ukraine, and State Forest Resources Agency of Ukraine, and different sector specific publication. We gathered key macro and microeconomic information and facets of the industry. The country report examined employment statistics both nationally and within the forest and wood sector, shedding light on the sector's workforce composition and significance. Also delved into Ukraine's forest sector, encompassing an overview of forest resources, identification of main actors, and an analysis of production, consumption, and trade dynamics. Moreover, it assessed the sector's legislation, including certification schemes, licensing procedures, and auction mechanisms. The selected case was related to the wood industry, which underwent major changes after the war, as explained in the introduction.

4.2. Online surveys

The second step involved the implementation of an online survey, designed to discover and describe the economic and employment challenges faced by the wood industries after the war started. We started planning in early 2022, prioritizing and ensuring the safety and security of all involved in the survey process. Consequently, we opted to utilize an online survey as the primary means of data collection. We used LimeSurvey as the digital survey platform, and we conducted this data collection phase from February to June 2023. This approach allowed us to collect responses from across Ukraine, trying to cover all the territory, although we know we will face challenges to collect information from companies in the East. To enhance survey response rates and clarify the purpose behind our inquiry, we also conducted follow-up phone calls. Notably, the survey was conducted exclusively in the Ukrainian language, and participant anonymity was upheld throughout the process.

The process of selecting companies for the online survey sample was as follows:

i. We selected from various public sources lists of both public and private companies. For state-owned companies, we utilized sources including the Database of state-owned companies (accessible through the websites of the Regional Administrations of the SFRA), web search results of communal property of state-owned companies using the term 'агролісгосп' (as a national-level database for such enterprises does not exist), the Database of PEFC-certified companies (currently limited to state-owned companies) in Ukraine, and FSC-certified companies (FSC Dashboard). For private companies, we referred to the FSC list (by selecting the COC type of certificate) (PEFC does not publish list of companies) and lists available on the websites of professional associations of wood processing enterprises.

ii. Cross-referencing these sources, resulting in the random selection of 50 public and 50 private companies.

iii. Considering that many of the initially selected companies did not respond, we included an additional 25 public and 25 private companies using the same random selection procedure.

In total, six (6) state-owned companies' and fifteen (15) private companies' responses were received, with over 85% of the survey questions completed.

Responding state-owned companies were primarily located in the provinces of Khmelnytskyi, L'viv, and Chernivtsi, while private companies were situated in Kiev, L'viv, Rivne, Cherkasy, Transcarpathia, Volyn, Vinnytsia, and Ivano-Frankivsk. Most of these companies are concentrated in the northwest region of the country. This geographic concentration aligns with the fact that 50% of the companies operate in the western part of the country, as documented by Koval and Liahovska (2019).

The survey distributed to these companies comprised two main sections (see Annex 8.1): Part 1 addressed the productive and economic aspects of the companies. It included questions about the products they manufacture, raw materials consumption, raw material shortages and reasons, receipt of government subsidies, marketing details (such as commercialized volumes, prices, and logistics), and net turnover. Part 2 focused on capturing information about employment. This section included questions related to the number of employees, types of contracts, gender distribution, skill sets, wages, and hiring challenges. In total, the survey questionnaire encompassed 22 questions. We applied descriptive statistics to explore employment and economic challenges occurred in the wood-industries.

4.3. Qualitative surveys

Over the course of six months, starting from October 2022 to March 2023, our online survey yielded fewer responses than we had expected. We gathered responses from 6 state-owned companies and 15 private companies, considering a complete survey over 85% of responses were filled out. Recognizing the need for a deeper understanding of the challenges of the industry, we decided to conduct in-depth interviews to gather qualitative information. As a result, on July 18, 2023, we hosted a workshop in Lviv[1] to initiate the collection of new information and to invite companies to participate in the quantitative survey.

Figure 3: Workshop of Wood for Work, Lviv, Ukraine, July 2023

[1] Link to the event: https://nltu.edu.ua/index.php/novyny/item/1678-vidbuvsia-praktychnyi-seminar-u-mezhakh-proiektu-wood-for-work

As a result, we conducted in-person interviews with four companies located near Lviv, considering the presence of the Ukrainian National Forestry University, and the importance of ensuring the safety of the interviewers. Given the limited options available in the Lviv region, the remaining two interviews were conducted online with companies based in Kyiv. The interviews were confidential.

The results of the online survey and the outcomes of the workshop helped us formulate focused guiding questions for our in-depth interviews. We aimed for a concise yet targeted list of questions to ensure a productive interview process in a maximum of one hour time interview. The questionnaire comprised eleven questions designed to explore various dimensions of the war's impact on these businesses and to gain a understanding of the existing business landscape (see Annex 8.2). One of the key thematic areas explored included employment-related issues. We aimed to understand:

- the employment-related difficulties faced by companies, strategies employed to mitigate personnel shortages, the influence of the war on the availability of qualified workers, and to identify the skills and profiles that the industry needs.

- the assessment of access to raw materials and the state of sales markets, encompassing questions about the impact of raw material availability and pricing on production, supplier changes, and customer relationships.

- the companies' outlook on the industry's future. We sought insights into market expectations, anticipated changes in sales trends, and their potential implications for the sector's attractiveness in terms of employment opportunities.

The overall results are presented below in Section 5.

5. Results of the case study

5.1. Results of the online survey

A primary observation from the online surveys highlights that most state-owned companies concentrate on primary forest production, with their processing activities predominantly limited to the production of sawnwood and wood pellets from residues. This focus contrasts with private companies, which engage in a broader range of activities, including the production of sawnwood, wood pellets, veneer, and other boards. As a result, the value chain of state-owned companies is comparatively shorter than that of private enterprises. Regarding the impact of the war on employment within the wood industries (see Table 6 in Annex 8.3), private companies surveyed online reported encountering difficulties in recruiting qualified or experienced workers. Both state-owned companies and private enterprises reported an average reduction of approximately 5% in their workforce.

The concern among private companies regarding the shortage of specialized personnel was once again evident in their responses to the question about anticipated permanent changes. The level of agreement expressed in

Table 7 in Annex 8.3 reflected the magnitude of this concern. They also answered they have concerns about the potential long-term shortage of raw materials, attributing it to the repercussions of the war and the widespread destruction of forests. Both state-owned and private companies expressed concern about possible changes in the destination of their products, since one of the main markets was Russia. They also responded that they consider the relocation of companies from the east to the west of the country to be permanent.

We asked the companies about subsidies and support programs (Table 8 Annex 8.3). We aimed to assess the companies' awareness of and need for governmental support, particularly regarding a new program launched in 2022 offering loans for equipment and machinery. The response revealed that none of the private companies or Forest Management Enterprises (FMEs) surveyed reported receiving support in areas such as employment, innovation, exports, energy, or transport. While public enterprises generally indicated a lack of financing, a few responses indicated awareness of the programs, more than 50% of the interviewed private companies answered that they do not know the program.

Given the diversity of the responses from both private and public companies, followed by the discussion of these results during the Lviv Workshop in July 2023, we decided to conduct more in-depth interviews to continue exploring the challenges of the wood industries. The main topics we picked and followed up were challenges obtaining raw materials, the future outlook of the market and the types of institutional support they believed would be necessary to address these challenges effectively.

5.2. Results of the qualitative interviews

5.2.1. Employment challenges and impact of the war of the surveyed companies

The ongoing war in Ukraine has significantly influenced the wood industry, presenting serious challenges that demand nuanced strategies for production and workforce management.

A primary challenge faced by surveyed companies revolves around the mobilization of male workers into the army, resulting in a noticeable shortage of manpower. In response, private enterprises indicated that they have strategically redefined their hiring strategies, bringing women into roles traditionally occupied by men and delving into automation solutions to offset the shortage in male labor.

Private companies have also highlighted the prevalence of interruptions to the continuity of production. Faced with the imperative to adapt, these companies have turned to technological solutions such as the use of fuel generators to sustain ongoing operations. Overtime work and adaptive strategies, including the engagement of internally displaced persons, have proven instrumental in ensuring the resilience of production processes.

State-owned companies, on the other hand, underscore the challenges in the hiring process, particularly due to additional requirements from the register of conscript men, complicating recruitment. Consequently, these companies have redirected their focus towards adapting existing employees and redistributing work responsibilities to navigate the shortage of manpower.

Moreover, the war has fundamentally reshaped the landscape concerning the availability of qualified workers and the demand for specific skills. Within the private sector, a discernible outflow of personnel attributed to the war has introduced a distinct set of challenges. Roles traditionally considered physically challenging, especially for women, are proving increasingly difficult to fill. There is now a growing demand for individuals possessing specific attributes such as proficiency in chainsaw operation and driving, coupled with requirements for good physical shape and eyesight.

Additionally, companies have emphasized the pronounced shortage of technical and professional workers, exacerbated by the younger generation's reluctance to pursue technical sciences. The evolving academic landscape, with young people choosing more humanitarian disciplines, has left a noticeable gap for electricians and engineers. During the 2021 admission campaign, a mere 18% of applicants opted for vocational and technical education, in stark contrast to the more than 80% of young Ukrainians who pursued enrollment in higher educational institutions (Unian, 2021). Furthermore, data from the information system "Vstup.OSVITA" (2023) reveals that in 2023, the majority of university applicants favored fields such as Law, Psychology, Philosophy, Computer Science, and Management. The scarcity of technical science workers underscores the industry's ongoing struggle to secure qualified individuals for these specialized roles.

In summary, the Ukrainian wood industry grapples with significant challenges due to the war, requiring diverse strategies for employment and production continuity. Private firms prioritize automation and unconventional hiring, showcasing resilience. State-owned companies navigate complex hiring and prioritize employee retention amid workforce reduction.

Box 1: Employment challenges

The Ukrainian wood industry, both private and public, faces significant employment challenges due to the war. Private firms showcase resilience through automation and unconventional hiring, while state-owned companies navigate hiring complexities. The war reshapes the skills landscape, highlighting shortages in technical and professional workers.

5.2.2. Raw materials and sales markets: navigating economic challenges.

The war also introduced profound challenges to the wood industry, prompting a reevaluation and re adaptation of crucial economic aspects such as raw material availability, pricing dynamics, supplier relationships, and logistical considerations.

The availability and prices of raw materials have been pivotal in shaping production dynamics for private companies in the wood industry. While some companies reported an initial limitation in wood supply from war-affected regions, others highlighted strategic adaptations to the crisis as the new normal. For example, one surveyed private company indicated that faced a complete halt in plant activity due to war-induced disorder but adapted without current raw material shortages. Another firm, well-supplied with raw materials, said that strategically shifted to produce other high value-added products, optimizing processes and materials in response to elevated prices. In contrast, others private companies commented that grappled with increased raw material prices, navigating regional disruptions, and striving to produce competitively priced goods despite challenges in maintaining stable supplies. It is important to note that this situation occurs within the framework of the state supplier company "Forest of Ukraine". All wood state-owned companies operate as subsidiaries of this central entity. Even though wood is sold through auctions, these companies play a pivotal role in setting the initial prices. This arrangement establishes a dominant market position, significantly impacting the market dynamics. Despite these challenges, some private companies affirmed that the supply of raw materials remains stable, and they continue to prioritize the procurement of high-quality resources.

Figure 4: Raw materials yard at an interviewed company, Ukraine, July 2023

On the other hand, public wood industries argue that they do not experience current issues with raw materials. They report a notable reduction in its operations, resulting in decreased production and staffing issues. Profitability challenges have shifted the company's focus towards selling raw materials rather than producing finished products.

Supplier dynamics have witnessed shifts, particularly in regions directly impacted by the war. Companies have demonstrated resilience by adapting to changes in supply sources. While some companies have added new suppliers to mitigate interruptions caused by war, others have maintained stability by relying on suppliers from relatively safe regions. The main suppliers mentioned were from the regions Lviv, Volyn, Rivne, Zhytomyr, Ternopil, Khmelnytskyi, and Ivano-Frankivsk.

Furthermore, another issue mentioned by the surveyed private companies was the necessity for legal compliance in the procurement of raw materials, including various certificates and permissions, emerged as a bureaucratic challenge for some companies.

On the other hand, the state-owned companies mentioned that they do not have problems regarding raw material access because they rely on their resources. Which gives a degree of stability in the supply chain. Nevertheless, they mentioned they made a political strategic decision (Epravda, 2023) on shifting to selling raw materials, instead of wood processed products. All the processing facilities will then be privatized or proposed to be contracting.

Regarding the changes in customer relations and logistics, the private companies surveyed indicated that they had to re-adapt their production due to the demand reduction and customer preferences for lower-priced products. An example of adaptation is that companies manage warehouse stock and show competitive pricing to retain customers. Another example that exemplifies flexibility is that companies diversify product offerings, shifting from oak to more readily available spruce and pine. Furthermore, companies changed their direction of clients, from Russia and Belarus to mostly European countries.

Logistics, including transportation and delivery considerations, were affected by factors such as fuel prices and stricter freight loading standards. This transportation issue, initially impacted by war-related interruptions and traffic jams, has relatively normalized over time.

In conclusion, the wood industry in Ukraine is undergoing a complex transformation in response to the war's impact on raw materials and sales markets. Companies are demonstrating adaptability and resilience in their strategies to ensure continuity in production and meet the evolving demands of customers.

Box 2: Companies navigate economic challenges

Wood industries, both private and public, respond adeptly to challenges posed by war impacts on raw materials and sales markets. Private companies navigate market fluctuations, while public entities contend with additional uncertainties tied to political considerations.

5.2.3. Outlook from the surveyed companies' perspective: market trends, industry attractiveness and impact on employment

Amidst uncertainties about the future, private wood industries present diverse perspectives. Some express optimism, envisioning an upswing in demand in a recovery scenario. The anticipation of increased construction needs, particularly for reconstruction and restoration, increases positive expectations. These companies believe that wood will have potential for growth across different economic areas that will require this renewable source.

State-owned companies, while expressing optimism, remain cautious, emphasizing the interconnectedness of market conditions with long-lasting war. Issues such as electricity shortages, production disruptions, and broader economic instability loom over the otherwise positive outlook. Nevertheless, they see a high demand in the construction sector in a recovery scenario.

Figure 5: Fire wood production at an interviewed company, Ukraine, July 2023

Examining the wood industry's allure and its impact on employment provides valuable insights into its future trajectory. Private wood companies present a mixed picture of the sector's appeal. Some companies emphasize positive aspects that they have such as competitive salaries, attractive bonuses, and extensive opportunities for employee self-realization. The commitment to updating industry standards to align with global benchmarks and ensuring a consistent supply of processed wood is seen as crucial for sustaining the industry's employment attractiveness. However, challenges are evident, especially concerning the above-mentioned shortage of skilled personnel and the need for strategic workforce planning.

Automation and training are identified as key strategies for maintaining stability and addressing shortages in the private sector. The industry acknowledges that attracting a diverse workforce, including women, requires adapting to changing demands and providing modernized working conditions.

Public wood companies echo similar responses about the industry's situation. The emphasis on good salaries, rewards, bonuses, and efforts towards modernization underscores a commitment to retaining and attracting skilled workers. Moreover, the strategic shift by the government to wind down most of its own wood operations in public companies (Derevynnyk.com, 2023), opting instead to sell only raw materials, marks a significant turn in market dynamics. Coupled with the ongoing war, these changes introduce a level of uncertainty that affects both the current situation and future prospects of the industry.

In conclusion, the outlook of the wood industry reflects a delicate balance between optimism and uncertainty. Companies anticipate increased demand driven by reconstruction needs. And at the same time, they do not know how this recovery scenario will be if the war lasts long. The industry's attractiveness and impact on employment are also central concerns, with calls for training, reduced bureaucracy, modernization, and strategic planning to reinforce its attractiveness.

Box 3: Outlook and impact on employment

The wood industry's outlook, both private and public, reflects a delicate balance between optimism and uncertainty. Anticipation of increased demand is coupled with concerns about the war's duration. Industry attractiveness and employment impact call for training, reduced bureaucracy, modernization, and strategic planning.

6. Recommendations and conclusions

6.1. Summary of the challenges identified

The findings from the case study on Ukraine's wood industry reveal a sector grappling with multifaceted challenges arising from the ongoing war. The impact on production continuity, workforce dynamics, raw material procurement, and market fluctuations necessitates urgent strategic interventions for sustainable recovery. A summary is presented below Table 1:

Table 1: Summary of challenges identified in the surveys

Challenge	Description	Identified which survey
Employment		
1. Shortage of qualified workers	The war has reshaped the skills landscape, leading to shortages of technical and professional workers, particularly in the private sector.	Online and qualitative survey
2. Manpower shortage due to war and potential long-term shortage	Mobilization of male workers into the army has led to a shortage of manpower, prompting private companies to adapt hiring strategies, including employing women.	Online and qualitative survey
Production and raw material		
3. Interruptions in production	Private companies face interruptions in production due to the war, leading to the adoption of technological solutions like fuel generators to sustain operations.	Qualitative survey
4. Raw material availability	Private companies navigate challenges in raw material availability and pricing dynamics, requiring strategic adaptations to ensure continuity in production.	Online and qualitative survey
5. Shifts in supplier dynamics	Companies demonstrate resilience by adapting to changes in supply sources, including adding new suppliers from safe	Qualitative survey

	regions and maintaining stability amidst regional disruptions.	
6. Bureaucratic challenges in the procurement of raw materials	Legal compliance in the procurement of raw materials, including various certificates and permissions, emerges as a bureaucratic challenge for some companies.	Qualitative survey
7. Government production support programs	Private companies express not knowing of a new government program offering loans for equipment and machinery in 2022, aimed to support and enhance the sector	Online survey
Market sales		
8. Changes in destination of product sales	Both state-owned and private companies express concern about possible changes in the destination of their products, particularly due to the impact of the war and changes in market dynamics.	Online and qualitative survey
9. Shifts in customer relations	Private companies adapt production to changes in customer demand and preferences, including diversifying product offerings and shifting to new client markets.	Online and qualitative survey
10. Changes in logistics	Logistics, including transportation and delivery, are affected by factors like fuel prices and war-related interruptions, requiring companies to adjust strategies.	Qualitative survey
Industry and employment outlook		
11. Uncertainty in market conditions	Both private and public companies face uncertainty in market conditions due to the war's duration, impacting industry outlook and future prospects.	Online and qualitative survey
12. Industry attractiveness	Challenges include attracting and retaining skilled workers, addressing bureau-	Qualitative survey

	cracy, modernizing operations, and strategic planning to reinforce industry attractiveness.	

As we delve into the recommendations, it is essential to align them with the identified challenges, ensuring a cohesive and targeted approach, separating them between strategies for the government, companies, and associations.

6.2. Proposals for Government interventions

The government plays a pivotal role in the revitalization of the wood industries and in the recovery process of the country in the aftermath of the war.

One of the first measures the government could implement to strengthen the logistic issue is the enhancement of transportation infrastructure. This infrastructure was severely impacted by the war, necessitating both reinforcement of existing structures and medium-term expansion, which should include the development of additional rail and road networks. This step is particularly crucial for facilitating exports to other European countries, a key market for Ukraine, and for streamlining operations while reducing transportation costs.

Furthermore, to boost supply, it could be appropriate to establish transparent auction system for wood procurement. This involves reinforcing the existing auction system and implementing transparent and effective price mechanisms. Such measures can foster equitable access to raw materials for both small and large companies, preventing monopolies and promoting healthy competition within the industry.

Thirdly, we suggest that the government could initiate special programs, subsidies, or financial loans to promote investments and innovations within the wood sector. While some private companies expressed interest in participating in the new governmental program offering loans for equipment and machinery, it was found that most were unaware of its existence. Therefore, ensuring the accessibility and publicity of these subsidy programs is crucial to maximizing their positive impact.

The government could influence the market dynamics by favouring wood in public tenders, especially those related to reconstruction efforts. Consideration could be given to implement special program to rebuild private houses with wood. As experience in Germany shows, this is not just a question of incentivizing timber construction. It is also about adapting building guidelines for multi-store house construction, establishing approval processes regarding statics and fire protection, introducing wood as a material to architects and planners and timber construction companies when introducing new technologies. For example, some federal states in Germany have timber construction quotas of 40% in the single-family house sector and are beginning to plan new urban districts in timber construction.

The fifth recommendation involves addressing the specific educational and skill requirements of the wood industry. The government could design specialized programs in rural areas to improve technical skills, ensuring a sustained supply of skilled workers in the long term.

Finally, to foster collaboration and growth within the wood industry, the government could develop a forest cluster policy. Such policy involves the active support and promotion of the creation of partnerships among various sector stakeholders, including international cooperation and exchange, to boost sales. Such collaborative efforts can significantly enhance the competitiveness and overall growth of the sector.

Table 2: Challenges and proposed actions for the government

Challenge	**Proposed actions**
1. Shortage of qualified workers	Address educational and skill needs with specialized programs: - support for dual education programs (universities, colleges) - support of the opportunities of the vouchers for unemployed applicants for study at the centers of the professional training, State Service of Employment - Internal retraining programs.
6. Bureaucratic challenges in the procurement of raw materials 12. Industry attractiveness	Establish transparent supply conditions which consider the interests of small and medium companies through a strengthened auction system.
7. Government production support programs	Initiate special programs, subsidies, or financial loans to promote investments and innovations within the wood sector.

	Ensure accessibility and publicity of these subsidy programs.
8. Changes in destination of product sales 11. Uncertainty in market conditions	Initiate a forest cluster policy for enhanced industry partnerships, to boost sales.
10. Changes in logistics	Enhance transportation infrastructure for efficient operations.

6.3. Proposals for the wood industries

The wood industry, confronted with the challenges of war, has demonstrated adaptability through various strategies. The following list outlines proposals identified in interviews, supplemented by additional recommendations aimed at encouraging sectoral growth.

Collaborating with industry partners is essential for driving innovation and growth, addressing the challenge of finding skilled employees in the sector. This involves collaborating with training centers, universities, and government bodies to adjust educational programs to meet changing skill needs. Creating apprenticeship programs, internships, and on-the-job training initiatives can speed up skill development and make it easier for workers to enter the wood industries. Furthermore, promoting gender diversity by encouraging the participation of women in traditionally male-dominated roles and leveraging automation to offset labor shortages is vital for enhancing the sector's workforce. The results of the study show that there are model projects in Ukraine.

As a second recommendation, given the economic challenges confronting companies, implementing adaptive strategies for production, supply chain management and customer relations is crucial. For production, integrating technological solutions such as fuel generators can sustain operations and ensure continuity. Regarding supply and markets, strategies may include diversifying product offerings, fostering collaborative partnerships for joint raw material procurement, and optimizing processes. Additionally, exploring new markets to attract new clients and enter new regions can be beneficial. The certification process can further enhance credibility with these new clients.

In the third recommendation, the industry should prioritize investments in innovation, both in products and marketing. This entails allocating resources to research and development, designing new products with higher added value, and enhancing production efficiency through environmentally friendly methods. These innovations can be used in marketing campaigns to attract new clients and enter new markets. As a consequence, sawmills do not necessarily have to end with the production of pallets but can produce a value-added chain up to preliminary products for timber house construction.

Table 3: Challenges and proposed actions for wood industries

Challenge	**Proposed actions**
1. Shortage of qualified workers 2. Manpower shortage due to war and potential long-term shortage	Partner with training centers, universities, and government bodies. Adapt and develop new educational programs to changing skill needs. Gender diversity.
4. Raw material availability	Partnerships for joint raw material procurement.
3. Interruptions in production	Integrating technological solutions such as fuel generators can sustain operations and ensure continuity.
5. Shifts in supplier dynamics 11. Uncertainty in market conditions	Diversify product offerings and optimize processes. Explore new markets and new regions.
9. Shifts in customer relations 12. Industry attractiveness	Use innovations in marketing campaigns to attract new clients and markets.

6.4. Proposals for associations of the wood industries

Associations play a vital role in promoting sectoral growth. By closely collaborating with the government, they could actively engage in formulating and advocating for tailored support or investment programs. Furthermore, they can contribute valuable information and analysis of the sector, providing insights into the real needs of companies. This has the potential to ensure that the wood industry receives the necessary assistance to address its unique challenges during and after the war, adopting a sustained development path.

Moreover, associations have the potential to offer support with the application of governmental programs. By guiding companies through potentially complex processes, which might be challenging or unknown to them, they can unlock opportunities for a sustained recovery.

Associations can contribute to sector growth by proactively engaging in employee training through workshops, seminars, and educational initiatives. This initiative has the potential to enhance the skills of the workforce, significantly contributing to the overall advancement of the wood industry.

Table 4: Challenges and proposed actions for associations of wood industries

Challenge	Proposed actions
1. Shortage of qualified workers 2. Manpower shortage due to war and potential long-term shortage	Collaborate with the government in the formulation of support programs. Proactively engage in employee training through workshops and seminars.
7. Government production support programs	Support companies in navigating governmental programs
8. Changes in destination of product sales	Collaborate with the government in the formulation of support programs.
12. Industry attractiveness	Provide valuable sector analysis for informed decision-making and sector growth.

6.5. Conclusion

Following the WoodforWork project's thorough examination of Ukraine's wood industry, unveiling the challenges and opportunities within the sector, a clear picture has emerged. This insight highlights the critical juncture at which the industry finds itself, demanding strategic interventions for sustainable recovery. However, the resilience displayed by both private and state-owned companies underscores a capacity for adaptation and innovation. The convergence of economic challenges, supply chain disruptions, and shifts in customer preferences has necessitated a dynamic and responsive approach.

As Ukraine's wood industry is navigating the complex scenario, we suggest the implementation of different strategies tailored to various stakeholders. Governmental strategies could encompass infrastructure enhancement, tax reforms, and compensation for war damages. Wood industries could prioritize innovation, circularity, adaptive supply chains, partnerships, and market diversification. Associations could engage in sector analysis for smart decision making, support subsidy programs implementations, and facilitate employee training. These strategies not only address current obstacles but also position the industry as a driver of economic revitalization and environmental responsibility.

7. References

СВІТА.UA. (2023). *Рейтинг спеціальностей у вишах за кількістю поданих заяв*. Retrieved from https://osvita.ua/consultations/89708/

Derevynnyk.com. (2023, Nov 24). *До кінця року ДП «Ліси України» згорне більшу частину власної переробки*. Retrieved from https://derevynnyk.com/do-kinczya-roku-dp-lisy-ukrayiny-zgorne-bilshu-chastynu-vlasnoyi-pererobky/

Dyug, Y. (2023, Nov 22). *Control shot: the blocked border and wood prices are killing woodworkers and furniture makers.* . Retrieved from https://site.ua/yuriy.dyug/kontrolnii-postril-zablokovanii-kordon-i-cini-na-derevinu-dobivayut-derevoobrobnikiv-ta-meblevi

Epravda. (2023, Julio 4). *Кінець схемам у лісовій сфері? Що зроблено і що необхідно ще зробити*. Retrieved from https://www.epravda.com.ua/columns/2023/07/4/701883/

Guzhva I., Ivanov Y. (2018). Topical Issues of providing raw materials to woodworking industry enterprises in Ukraine. *Economics. Ecology. Sociym*, Vol. 2, No. 2, ISSN: 2616-7107.

Halasiuk. V. V. (2017). Особливості державної політики щодо забезпечення сировиною підприємств деревообробної промисловості України. Вісник Харківського національного аграрного університету. *Економічні науки*, № 3. С. 254-264). https://repo.btu.kharkov.ua//handle/1.

Halyniak L.; Pavlykivska O. (2022). Activities of the furniture industry in the context of the coronavirus pandemic and the Russian war against Ukraine. *Conference "Formation of a Mechanism for Strengthening the Competitive Position of National Economic Systems in the Global, Regional and Local Dimensions"*, (pp. 100-106).

Hubarieva, I. O., Zinchenko, V. A., Manoilenko, O. V., & Blahun, S. I. (2022). ДЕТЕРМІНАНТИ ЗАБЕЗПЕЧЕННЯ КОНКУРЕНТОСПРОМОЖНОСТІ ДЕРЕВООБРОБНОЇ ПРОМИСЛОВОСТІ В УКРАЇНІ У ПОВОЄННИЙ ПЕРІОД. *Problemy Ekonomiky*, (1), 33-40.

Koval. L, Liahovska O. (2019). The assesment of woodworking industry business enviroment in the western region. *Economics Time realitis*, 2226-2176, ISSN: 2226-2172.

Muzyka, D. I., & Figurka, M. V. (2017). *Аналіз розвитку деревообробної промисловості України (Doctoral dissertation, ІФННІМ ТНЕУ)*.

National Council for the Recovery of Ukraine form the War. (2022, July). *Ukraine Recovery Plan. Working Group for "Economic Recovery and Development"*. Retrieved from Cabinet of Ministers of Ukraine/Кабінет Міністрів України: https://www.kmu.gov.ua/storage/app/sites/1/recoveryrada/eng/economic-recovery-and-development-eng.pdf

Prins, K. (2022). War in Ukraine, and extensive forest damage in central Europe: Supplementary challenges for forests and timber or the beggining of a new era?

Reuters. (2023). *Ukraine suffers biggest economic fall in independent era due to war*. Retrieved from https://www.reuters.com/markets/europe/ukraines-economy-falls-304-2022-minister-2023-01-05/

Sozanskyy, L., & Koval, L. (2019). Тенденції зовнішньої торгівлі продукцією деревообробної промисловості в Україні і країнах ЄС. *Ефективна економіка*, no. 12.

State Statistics Service of Ukraine. (2022). *Demographic and social statistics / Labor Market.* Retrieved from Average number of regular workers by type of economic activity in industry (monthly information): https://ukrstat.gov.ua/

Unian. (2021, Nov 11). *Unian*. Retrieved from Професійно-технічну освіту в 2021 році обрали лише 18% абітурієнтів - експерт: https://www.unian.ua/society/profesiyno-tehnichnu-osvitu-v-2021-roci-obrali-lishe-18-abituriyentiv-ekspert-novini-ukrajini-11606506.html

8. Annex:

8.1. Online survey questionnaire

Introductory statement

The WoodforWork (WfW)[2] project aims to generate reliable information on the employment situation along the forest-related value chain in various economies of the world. The primary study aspects include, inter alia, informal employment, gender, decent work, and impacts of institutional, legal, or economic conditions' changes on forest-related employment.

The objective of this survey is to evaluate the employment situation in the wood processing sector in Ukraine. We would like to assess the changes in the sector since the beginning of the war in February 2022. The main issues we strive to analyze are: 1) regional displacement of processing plants / companies; 2) changes in the supply of raw wood material for the production; 3) regional displacement of labor (from the East to the West of the country) and also possible lack of labor due to a flow of refugees outside the country or excess labor offer in the western part of Ukraine; 3) changes in the markets in the forestry sector; 4) difficulties in the infrastructure leading to problems in the production flow of wood products (e.g., no transport available); 5) changes in the export situation with impact on the production flow.

Data confidentiality

We assure you that all provided information during the interview will be kept strictly confidential and anonymous. Data will be used solely for scientific and project purposes. Individual responses or information potentially traceable to your organization will not be distributed for any purpose. Your time in providing us with this valuable information is greatly appreciated.

Survey Information

Date of interview	
Working position of the respondent	
Respondent info	☐ Male ☐ Female Age….
Company name	
Company Zip Code	
Comments/notes	

[2] The project is funded by the German Federal Ministry of Food and Agriculture (BMEL) through the German Federal Office of Food and Agriculture (BLE) due to a decision of the Deutscher Bundestag and coordinated by Thünen Institute of and unique land use GmbH, in cooperation with FAO and local partner institutions in several countries. Our partner in Ukraine is the Ukrainian National Forestry University in Lviv.

Part 1: Production and scenario questions for companies

Reference period: 2021 – 2022
Currency: Hryvnia

1. In which wood processing sector would you classify your company? You can also select more than one sector.

Question N°	What do you produce?	Tick the box
1.1	Sawnwood	
1.2	Veneer	
1.3	Plywood	
1.4	Fiberboard	
1.5	Paper board	
1.6	Other boards	
1.7	Wood pellets/ Wood briquettes	

<u>Raw material and production</u>

2. Please specify which raw material you use for your production process. You can also tick more than one material.

Question N°	Raw material type	Tick the box
2.1	Roundwood coniferous	
2.2	Roundwood non-coniferous	
2.3	Industrial roundwood coniferous	
2.4	Industrial roundwood non - coniferous	
2.5	Sawnwood coniferous	
2.6	Sawnwood non-coniferous	
2.7	Veneer and plywood	
2.8	Particle board and OSB	
2.9	Fiberboard	
2.10	Laminate wood	
2.11	Wood chips and particles	
2.11	Wood residues	

2.12	Other	

3. A. If your company has a lack of raw materials to produce due to the war, can you indicate the reason? You can tick more than one reason.

Question N°	**Raw material type**	**Tick the box**
4.a.1	Not affected in any way	
4.a.2	High prices, not able to buy them	
4.a.3	Not enough volume offered in the market to purchase	
4.a.4	Routes inaccessible	
4.a.5	Transportation costs have risen sharply, and I can't afford it	
4.a.6	Complicated logistics	
4.a.7	Suppliers do not deliver	
4.a.8	Other, please specify:	Please write

4. A. Which supports programs are currently used by the company for production?

Question N°	**Support / subsidies program topic**	**Tick if you are receiving support**	**Tick if you are encountering limitations to access to the programs**
5.a.1	Employment support / subsidy		
5.a.2	Innovation support / subsidy		
5.a.3	Export support / subsidy		
5.a.4	Energy subsidy		
5.a.5	Transport subsidy		
5.a.5	Other, please write		

B. Do you intend to apply for the new government program that provides loans for equipment and machinery?

Commercialization of products

5. How much of the following products did you sell in 2021 and 2022?

Question N°	**Product sold**	**2021**			**2022**		**Percentage change in price between 2021 and 2022**			
		Unit (m3, tones, etc.)	**Volume sold**		**Volume sold**					
6.1	Sawnwood									
6.2	Veneer and plywood									
6.3	Particle board and OSB									
6.4	Fiberboard									
6.5	Laminate wood									
6.6	Wood chips and particles									
6.7	Wood residues									
6.9	Other									

Logistics:

6. Did your company had to relocate to a new region of Ukraine or do you plan to?

a. No (*jump to question 11)*

b. Yes (*jump to question 12)*

c. *Yes, partially* (*jump to question 12)*

d. *Not yet, but we plan to relocate.*

e. We cannot relocate due to the following reasons (comment field)

7. Please select which were the main problems you encounter during the relocation. You can select more than one issue:

Problems	**Tick the box**
Higher costs of relocation	
Had to hire many employees, with a costly learning curve	
Less manpower available	
Had to change suppliers and struggled to find new ones	
Other, please specify:	

<u>Finance</u>

8. A. What is the annual net turnover (revenues less operational cost) of the company?

N° Question	**Period**	**Turnover (Hryvnia)**
14.a.1	2019	
14.a.2	2020	
14.a.3	2021	
14.a.4	2022	

Post war scenario

9. What measures do you think will help to mitigate the negative effects of the war:

Measures	**Tick the box**
Short-term tax benefits	
Credit vacation	
Demand stimulation programs	

Partial reimbursement of salaries for workers who are unable to work during martial law	
Coverage / deferral of rent / utilities	
Grants for direct activities	
Grants for digitalization of business (transfer of business online)	
Other, please mention:	

10. What changes do you consider will become permanent in the Ukrainian market? You can tick more than one reason

Changes	**Tick the box**
Relocation of production to the west of the country	
Changes in the final destination of product sales. For example, more products are sold in Europe than in other continents.	
Long-term shortage of specialized employees	
Long-term shortage of raw materials	
Many companies will seek to merge in order not to go bankrupt	
Other, please mention:	

Part 2: Employment

11. How many employed persons worked in your company in 2019, 2020, 2021 and 2022

Question N°	Years	Number of employed persons
15.1	2019	
15.2	2020	
15.3	2021	
15.4	2022	

12. How many permanent and temporary employed persons worked in your company during 2021 (total number) and by what percentage this value changed in 2022? (Please include all permanent workers and managers who work full-time and part-time). Please differentiate between male and female workers.

Permanent workers are defined as all workers that who work for a term of one or more fiscal years and/or have a guaranteed renewal of their employment and that who work a full shift or part-time.

Temporary workers are all short-term, that is, for less than a year, workers with no guarantee of renewal of employment and work full-time or part-time. The term also covers seasonal workers.

Question N°	**Type of contract and gender**	**In 2021 (total number) i.e. 200 workers**	**2022 (percentage change from 2021) i.e. +10% or -10%**
18.1	Permanent (female)		
18.2	Permanent (male)		
18.3	Temporary (female)		
18.4	Temporary (male)		

13. Please try to indicate the percentage of female workers in production and non-production in 2021 and by what percentage this value changed in 2022.

Question N°	**Type of work**	**In 2021 (total number)**		**2022 (percentage change from 2021)**	
		Female	**Male**	**Female**	**Male**
19.1	Production				
19.2	Non-production				

14. Please try to indicate the percentage of highly skilled, semi-skilled, low skilled permanent workers in 2021 and by what percentage this value changed in 2022.

Question N°	**Level of skill**	**In 2021 (total number)**	**2022 (percentage change from 2021)**
20.1	Highly skilled (professionals or technicians, whose tasks require extensive		

	theoretical and technical knowledge)		
20.2	Semi-skilled (workers, whose tasks require some level of mechanical or technical knowledge)		
20.3	Low-skilled (those, whose tasks involve no specialized knowledge)		

15. What was the **average monthly wage** for a production and non-production worker [in Hryvnia]? Please differentiate between male and female and enter the number of working hours per week in 2021 and by what percentage this value changed in 2022.

Question N°	**Monthly wage type (Hryvnia)**	**In 2021 (total number)**	**2022 change from 2021)**
21.1	Working hours per week		
21.2	Production (female)		
21.3	Production (male)		
21.4	Non-production (female)		
21.5	Non-production (male)		

16. Please try to indicate as a percentage of your staff increased (indicate value with +, e.g., +40%) or decreased (indicate value with -, e.g., -40%) according to type of work (production/non-production), caused by the war (2022).

Question N°	Type	2022
22.1	Production	
22.2	Non-production	

17. How do you evaluate the employment situation in your company since the beginning of the war? You can select more than one option:

- High employee rotation

- New employees are hired on an ad hoc basis to be flexible to varying production targets
- Difficult to find qualified or experienced employees
- Other (comment field)

18. Are there any women who are part of the management team or the decision-making group of the enterprise? If yes – how many percent?

Yes, please provide the percentage …….

No

19. If your enterprise complies with any of the following certification standards and/or national programs, laws or regulations, please rate to what degree they improved the current working conditions of female workers (woman) in your enterprise over the last five years?

Scheme/Program/Law	Please rate the working conditions of **female workers**					
	Extremely improve	Very improve	Moderately	Slightly improve	Not at all	Don't know / Not applicable
Forest Stewardship Council (FSC)						
Programme for the Endorsement of Forest Certification (PEFC)						
Employment framework						
Ukraine, Social Security Programs Throughout the World:						
Act on Maternity and infant care						
Other 1, please specify ………………………….						
Other 2, please specify ………………………………						

20. For your enterprise, how would you rate the following statements?

Statement	Strongly agree	Agree	Disagree	Strong disagree	Don't know/ Not applicable
26.1 With equal skills and qualifications, female workers have greater difficulty reaching leadership roles or getting promoted					
26.2 For the production unit, on average, women possess the same level of skills needed as men					

26.3 Women lead just as effectively as men					
26.4 Our female workers understand well the legal basis for women's right at work					

21. What are the main reasons of having lower share of **female production workers** or no females in your enterprises in 2021? (Multiple choices are possible)

Because the main tasks in the production unit require physical work

Because women are not willing or comfortable to live in tents in the camping areas

Because female workers prefer to work in non-production unit, e.g. admin, sales

Because we could find female workers with the appropriate job skills

Because most of women can only work part-time due to load at housework and motherhood

Because women prefer to work in another economic sector (non-related forest enterprise)

Other please specify:

8.2. Qualitative survey questionnaire

Employment Challenges and Impact of the War:

1. Which challenges regarding employment your company has faced since the war?
2. If you suffer continuity of the production due to lack of personnel, how did you address it? Meaning which strategies and measures did you take?
3. In your view, how has the war influenced the availability of qualified workers in your industry (male mobilization to the army, etc.)?
4. What specific skills and profiles do you find particularly needed and which ones are in high demand on the market?

Raw Materials and sales markets:

5. How has the volume availability and prices of raw materials affected your company's production and overall operations?
6. Have you changed your supplier(s) since the war?
7. And how do you see the future of supply?
8. Have you lost any customers or are you working with new ones?
9. Have you encountered challenges related to meeting demand, logistics and transportation (by train, by road)? What changes you consider might become permanent?

Future Outlook:

10. What are your market expectations for the future? Do you anticipate changes in sales trends, growth, or decline?
11. How do you envision these changes affecting employment within the sector? In your opinion, is the industry attractive to employees now and will it be so in the future? How can its attractiveness be improved?

8.3. Online survey results

Table 5: Type of products manufactured by companies type

Type of products manufactured	State-owned companies (% of total)	Private companies (% of total)
Sawnwood	83% (5)	67% (10)
Wood pellets	17% (1)	40% (6)
Veneer	0%	27% (4)
Plywood	0%	0%
Fiberboard	0%	0%
Paper board	0%	0%
Other boards	0%	13% (2)

Note: in parentheses the number of companies

Table 6: Impact of the war on employment

Type of products manufactured	State-owned companies (% of total)	Private companies (% of total)
High employee rotation	25% (1)	33% (5)
New employees are hired on an ad hoc basis to be flexible to varying production targets	25% (1)	20% (3)
Difficult to find qualified or experienced employees	50% (2)	71% (11)

Table 7: Changes that the companies consider will become permanent

Type of products manufactured	State-owned companies (% of total)	Private companies (% of total)
Relocation of production to the west of the country	67% (4)	33% (5)

Type of products manufactured	State-owned companies (% of total)	Private companies (% of total)
Changes in the final destination of product sales	83% (5)	40% (6)
Long-term shortage of specialized employees	33% (2)	67% (10)
Long-term shortage of raw materials	0%	53% (8)

Table 8: Intention on participating on new government program that provides loans for equipment and machinery by companies type

Type of products manufactured	State-owned companies (% of total)	Private companies (% of total)
Intention of applying	17% (1)	20 % (3)
No intention of applying	66% (4)	27% (4)
Program is unknown	17% (1)	53% (8)

Note: in parentheses the number of companies

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unique land use GmbH
Schnewlinstr. 10
79098 Freiburg, Germany
Tel +49 761 208534 – 0
unique@unique-landuse.de
www.unique-landuse.de